Monthly Oversight Report 26
ACS NPL Site
Griffith, Indiana
February 1, 2003 - February 28, 2003

BLACK & VEATCH

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Black & Veatch Special Projects Corp.

USEPA/RAC VII
American Chemical Services RAO (057-ROBF-05J7)

BVSPC Project 46526
BVSPC File C.3
March 7, 2003

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3-14-03

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Subject: Monthly Oversight Summary Report
No. 26 for February 2003

Dear Mr. Adler:

Enclosed is the Monthly Oversight Summary Report No. 26 for February 2003 for the American Chemical Services Superfund Site in Griffith, Indiana.

If you have any questions, please call (312-683-7856) or email (campbelllm@bv.com).

Sincerely,

BLACK & VEATCH Special Projects Corp.

Larry M. Campbell

Larry M. Campbell, P.E.
Site Manager

Enclosure

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Monthly Oversight Summary Report No. 26
ACS Superfund Site WA57, 46526.238

Reporting Period: Month of February (February 1, 2003 - February 28, 2003)
BVSPC O/S Dates: February 5, 6, 13, 19, 20, and 27, 2003

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	8	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	3	ONCA SBPA ISVE System Yard Piping Contractor
Austgen	1	General Contractor
Ryan Construction	2	General Contractor
Vidimos	3	OFCA ISVE System Scrubber Metal Fabricator
Mid-America Drilling	1	Drilling Contractor

Construction Activities

Major Activities:

- Independent Environmental Services installed the pneumatic pumps and air supply lines for the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Independent Environmental Services continued installing the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system yard piping.
- Ryan Construction disassembled the Off-Site Containment Area in-situ soil vapor extraction system thermal oxidizer and scrubber for inspection by Montgomery Watson Harza.
- Vidimos installed a second primary quench bar in the Off-Site Containment Area in-situ soil vapor extraction system scrubber.
- Montgomery Watson Harza began extracting groundwater from the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Montgomery Watson Harza began operating a new set of wells for the Off-Site Containment Area in-situ soil vapor extraction system on February 17, 2003.
- Montgomery Watson Harza conducted Task 3 of the *Work Plan for Phase 3 Investigation Oxygen Release Compound (ORC) Pilot Study.*

- Austgen and Montgomery Watson Harza marked the locations of the utility poles to be installed between the groundwater treatment plant and the future On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system blower shed.
- Montgomery Watson Harza collected two samples from the On-Site Containment Area Still Bottoms Pond Area interim clay cover for geotechnical analysis.
- Montgomery Watson Harza held weekly construction coordination meetings on February 6, 13, 20, and 27, 2003.

Activities Performed:

Independent Environmental Services (IES) installed the pneumatic pumps into the On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system dual phase extraction (DPE) wells on February 6, 2003. IES also installed the bulkhead fittings and the air supply lines to each of the DPE wells. During the week of February 10, 2003, IES completed connecting the air supply lines to the air sparge points. IES and Montgomery Watson Harza (MWH) successfully pressure tested all of the air supply lines by maintaining 150 psi for 15 minutes.

IES completed connecting the HDPE yard piping to the DPE wells and began tapping into the vapor phase wells for the connection to the yard piping. IES plugged the wells with an inflatable plug and purged the wells with nitrogen prior to tapping. IES performed air monitoring with a photoionization detector (PID) and an oxygen and lower explosive limit meter. After installing the saddles on the wells, IES proceeded to connect the HDPE yard piping to the saddles with 75-ft-lbs of torque on the bolts. MWH reported that it was requiring IES to tighten the bolts at the yard piping connections to the well saddles to 75 ft-lbs of torque, rather than its original requirement of 100 ft-lbs. IES had reported that the teflon gasket began deforming at the higher torque requirement. MWH decided that it would lessen the torque requirement in order to maintain the integrity of the gasket. IES reported that it should complete tapping into the vapor phase wells and complete the yard piping installation by the first week of March 2003.

MWH shut down the Off-Site Containment Area (OFCA) ISVE system on February 4, 2003. Ryan Construction began disassembling the scrubber for inspection on February 5, 2003. MWH reported that it observed that the interior of the scrubber sump was corroded in four locations opposite the vapor inlet. One of these locations of visible corrosion coincided with the location of the welds that had been failing over the previous weeks. MWH also reported that the spray nozzle on the primary quench bar was severely corroded. MWH decided to redesign the scrubber sump and quench system to minimize the high temperature levels in the unit and the resulting corrosion. On February 10, 2003, Vidimos replaced the original primary quench nozzle and installed a second primary quench nozzle for the unit with replacement nozzles fabricated from Hastelloy.

Ryan Construction reassembled the unit on February 11, 2003. MWH reported that it would schedule a second shut down of the OFCA ISVE system in order for Vidimos to install the upgrades to the redesigned scrubber sump. MWH reported that it will also perform a thorough inspection of the scrubber packing at that time. MWH reported that it believes that the packing is in good condition and that there may be calcified water deposits within the interstices of the packing. MWH brought the thermal oxidizer and scrubber up to operating temperature on Wednesday, February 12, 2003, and encountered difficulties with

restarting the system. Austgen was on-site on February 13, 2003, and reconfigured the manual stop for the system within the control locks, and MWH restarted the unit early on February 13, 2003. MWH began pulling vapors from a new set of Off-Site Containment Area (OFCA) ISVE system wells on February 17, 2003. MWH put 16 new wells on-line and monitored the system performance daily according to the *Performance Standard Verification Plan* during the week of February 17, 2003. MWH began weekly monitoring of the system on February 24, 2003.

MWH conducted soil sampling using direct push technology for Task 3 of the *Work Plan for Phase 3 Investigation Oxygen Release Compound (ORC) Pilot Study*. Mid-America Drilling installed soil probes in nine locations near the intersection of Colfax Ave. and Reder Rd. MWH observed dark staining in several probes near the water table. MWH screened samples with a PID and submitted soil samples for the following analyses: volatile organic compounds, diesel range organics, gasoline range organics, and total organic carbon.

On February 10, 2003, MWH tested the 18 perimeter ONCA SBPA ISVE system DPE wells. MWH reported that it was able confirm flow from 16 of the DPE wells. MWH believed that it was unable to establish flow from the remaining two wells because of the presence of product in one well and a potentially clogged air line in the second well. MWH did not test the three centrally located DPE wells because the discharge piping from the wells surfaces above ground at the blower shed concrete slab prior to discharge to the groundwater treatment plant (GWTP). MWH believes that there is a potential for the lines to freeze based on the cold weather conditions.

MWH operated the GWTP at 25 gpm. MWH began operating a portion of the ONCA SBPA DPE wells on Tuesday, February 11, 2003. MWH began operating five wells spatially distributed throughout the ONCA SBPA. After pumping from these wells, MWH added a second group of five wells, and the GWTP catalytic oxidizer unit shut down because the air stream exceeded the high temperature limit. MWH then decided to operate only the western DPE wells and that it would add eastern wells as possible. MWH decided that this would be the best option since the western firepond area is likely less contaminated than is the eastern SBPA. MWH operated nine DPE wells and was able to pump approximately 15 gpm from the wells. MWH also reported that the air stream from the aeration tank continued to exceed the high temperature limit of the catalytic oxidizer because of the high Btu volatile organic compounds that were extracted from the ONCA SBPA. MWH reported that it is evaluating bypassing the catalytic oxidizer unit and processing the vapor stream from the aeration tank in the OFCA ISVE system thermal oxidizer and scrubber. MWH reported that the OFCA ISVE thermal oxidizer and scrubber have sufficient capacity to process both the aeration tank vapor stream and the current flow from the OFCA well field. MWH also reported that Ryan Construction is scheduled to install a sump around the OFCA and future ONCA thermox units at the GWTP.

MWH reported that the semi-annual groundwater sampling event is scheduled for the week of March 24, 2003. MWH reported that all 32 wells in the groundwater sampling program will be sampled for a full scan of Target Compound List/Target Analyte List parameters.

Attached are BVSPC weekly reports No. 101 through 104, correspondence, log book notes, and photographs of the daily activities. BVSPC's crew conducted oversight of the major field activities on February 5, 6, 13, 19, 20, and 27, 2003. BVSPC's crew attended four weekly construction coordination meetings at the site on February 6, 13, 20, and 27, 2003.

Topics of Concern:

- MWH reported that there are two thin areas of the ONCA SBPA interim cover where the thickness of the clay is less than the design thickness. Based on Hard Hat Services, Inc.'s clay sample for the ONCA SBPA interim cover, the permeability of the clay does not meet the design requirements.

Concern Resolution:

- MWH reported that it collected two samples from the ONCA SBPA interim clay cover for geotechnical analysis on February 28, 2003.

Upcoming Activities:

- Area Survey to resurvey P-36 and MW-10C.
- IES to complete placing the geotextile over the ONCA SBPA interim cover.
- IES to complete tapping into the ONCA SBPA ISVE system vapor extraction wells.
- MWH to inspect the OFCA ISVE system scrubber packing.
- Vidimos to fabricate a replacement OFCA ISVE system scrubber sump.
- MWH to evaluate the permeability of the ONCA SBPA interim clay cover.
- Ryan Construction to install a sump around the OFCA and future ONCA thermox units.
- MWH to perform the semi-annual groundwater sampling event.

Signature: Leigh Peters Date: March 5, 2003

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Weekly Oversight Summary Report No. 101
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of February 3, 2003.
BVSPC O/S Dates: February 5 and 6, 2003 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	4	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	2	ONCA SBPA ISVE System Yard Piping Contractor
Ryan Construction	2	General Contractor

Construction Activities

Major Activities:

- Independent Environmental Services completed installing the pneumatic pumps and air supply lines to the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Montgomery Watson Harza and Independent Environmental Services began pressure testing the air supply lines to the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Ryan Construction disassembled the Off-Site Containment Area in-situ soil vapor extraction system thermal oxidizer and scrubber.
- Montgomery Watson Harza held the weekly construction coordination meeting on February 6, 2003.

Activities Performed:

Independent Environmental Services (IES) installed the pneumatic pumps into the On-Site Containment Area (ONCA) Still-Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system dual phase extraction (DPE) wells. IES also installed the bulkhead fittings and the air supply lines to each of the DPE wells on February 6, 2003. Montgomery Watson Harza (MWH) and IES began pressure testing the air supply lines by maintaining 150 psi in the lines for 15 minutes. IES reported that it will begin connecting the air sparge points to the blower shed piping next week. MWH reported that it expects to begin pumping from the ONCA SBPA ISVE system DPE wells by February 12, 2003. MWH also reported that it expected to have the ONCA SBPA ISVE system yard piping completed in the next two to three weeks and that it hopes to begin placing gravel over the ONCA cover by early March 2003.

MWH shut down the Off-Site Containment Area (OFCA) ISVE system on February 4, 2003. Ryan Construction began disassembling the scrubber for inspection on February 5, 2003. MWH reported that it observed that the interior of the scrubber sump was corroded in four locations opposite the vapor inlet. One of these locations of visible corrosion coincided with the location of the welds that had been failing over the previous weeks. MWH reported that the spray nozzle on the primary quench bar was severely corroded. MWH also reported that the scrubber packing may have melted near the base of the packed tower and that it will inspect the packing material in greater depth. MWH expects that the system will be down for repairs for approximately 1 week.

MWH continued operating the groundwater treatment plant (GWTP) at 20 gpm. MWH reported that it expected to be able to pump approximately 0.5 gpm from each ONCA SBPA ISVE system DPE well, for a combined flow rate of approximately 10 gpm. MWH reported that Simalabs will be collecting a sample from the water pumped from the ONCA SBPA ISVE system area on February 13, 2003, during routine GWTP sampling activities.

MWH reported that Task 3 of its *Work Plan for Phase 3 Investigation Oxygen Release Compound (ORC) Pilot Study* is scheduled for February 19 and 20, 2003. MWH will be collecting soil samples via direct push technology for analysis.

MWH held the weekly construction coordination meeting on February 6, 2003.

Topics of Concern:

- MWH reported that there are two thin areas of the ONCA SBPA interim cover where the thickness of the clay is less than the design thickness. Based on Hard Hat Services, Inc.'s clay sample for the ONCA SBPA interim cover, the permeability of the clay does not meet the design requirements.

Concern Resolution:

- MWH proposed to collect two samples from the ONCA SBPA interim clay cover for permeability testing. MWH reported that it will be scheduling sampling activities over the next few weeks.

Upcoming Activities:

- Area Survey to resurvey P-36 and MW-10C.
- IES to connect the ONCA SBPA ISVE system air sparge points.
- MWH and IES to complete pressure testing the ONCA SBPA yard piping.
- IES to complete placing the geotextile over the ONCA SBPA interim cover.
- IES to tap into the ONCA SBPA ISVE system vapor extraction wells.
- MWH to inspect the OFCA ISVE system scrubber packing.
- MWH to test the permeability of the ONCA SBPA interim clay cover.

Signature: Leigh Peters Date: February 3, 2003

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WEEKLY CONSTRUCTION MEETING AGENDA
FOR FEBRUARY 6, 2003 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA

MEETING DATE: Thursday, February 6, 2003

MEETING TIME: 10:00 am

MEETING LOCATION: ACS Site – Site Trailer

TOPICS:

Health and Safety Summary (Tom)

GWTP Status (Lee)
- Current flow rate

Off-Site ISVE System (Chris/Todd)
- System operation
- Update on Thermal Oxidizer

SBPA ISVE Yard Piping (Lee/Mike)
- Update
- Connecting air lines/installing pumps
- Flush mount wells
- Installing pumps, starting up BWES upgrades
- Them ox/scrubber procurement
- Look ahead

ORC Pilot Study Phase 3, Task 3 (Chad)

Design Refinements (Travis/Rob)

Looking Ahead

Week of...	**Task**
February 13	• GWTP/ISVE system operation • SPBA ISVE yard piping • SBPA BWES Upgrade Startup
February 20	• GWTP/ISVE system operation • SPBA ISVE yard piping
Health and Safety Look Ahead	• SPBA ISVE yard piping

Next Weekly Construction Meeting
- February 13, 2003 Thursday

SIGN IN SHEET
WEEKLY CONSTRUCTION METING
February 6, 2003

Name	Company	Fax Number
LEE OROSZ	MWH	
TODD LEWIS	MWH	
CHRIS DALY	MWH	
Travis Klingforth	MWH	
Leigh Peters	BVSPC	312 3464781

- Phone:
  - Rob Adams - MWH
  - Jon Pohl - MWH
  - Tom Tinics - MWH

WEEKLY CONSTRUCTION MEETING MINUTES FOR FEBRUARY 6, 2003 MEETING AMERICAN CHEMICAL SERVICE, NPL SITE GRIFFITH, INDIANA

MEETING DATE: Thursday, February 6, 2003

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:
Rob Adams – MWH (via phone)
Chris Daly – MWH
Lee Orosz – MWH
Todd Lewis – MWH
Tom Tinics – MWH (via phone)
Travis Klingforth – MWH
Jon Pohl – MWH (via phone)
Leigh Peters – BVSPC

TOPICS:

Health and Safety Summary

No health and safety incidents occurred at the Site since the last weekly meeting on January 30. Independent Environmental Services (IES) and Ryan Construction are working on site currently.

Groundwater Treatment Plant (GWTP) Status

The GWTP has been operating normally since the last meeting on January 30. The current flow rate is 23 gallons per minute (gpm). MWH expects to increase this flow rate during the week of February 10 when the On-Site Barrier Wall Extraction System (BWES) upgrades are started up.

In-Situ Vapor Extraction (ISVE) System – Off-Site Area

The Off-Site Area ISVE system, including the thermal oxidizer unit, operated since the last meeting on January 30 until February 5 when it was shut down for maintenance. The thermal oxidizer was then flushed out with clean water and air and scaly-buildup was removed from inside of the unit. Ryan Construction and MWH performed this maintenance.

The thermal oxidizer unit is structurally intact, though investigation has revealed that further corrosion has occurred to some of the inside components. MWH will continue to assess the effects of corrosion on the unit. Durr Engineering is scheduled to be on site February 6 to assist in the maintenance process. MWH plans to construct a replacement

sump of Hastelloy material during February. No corrosion has been noted to date in system components constructed from Hastelloy.

MWH has focused on operating the same set of 17 ISVE wells for the past three months to establish baseline data for these wells. As part of phase two of the Off-Site Area ISVE system operation, MWH will be finalizing a plan to fine-tune the system as needed. When the ISVE system is restarted with a new sump, MWH will shift to drawing influent vapors from a new set of ISVE wells.

The monthly sample of the thermal oxidizer off-gas was collected on January 30 and analyzed by Air Toxics Laboratories.

On-Site Area ISVE System

Submersible groundwater extraction pumps were installed in each of the 21 dual-phase extraction (DPE) wells on February 5. IES completed installing one-inch diameter airlines to each of the DPE wells on February 6. These lines will be pressure tested and MWH expects begin pumping from the upgraded On-Site Barrier Wall Extraction System (BWES) on February 11.

IES will next install one-inch diameter airlines to each of the six air sparge wells and pressure test these lines. After the 21 DPE wells have begun extracting groundwater, IES will continue tapping the remaining ISVE wells and bolting the three-inch diameter vapor extraction lines to the saddle at each well.

MWH continues to finalize the designs and work with the suppliers for the new thermal oxidizer/scrubber unit and On-Site Area blower sheds.

ORC Pilot Study Phase 3, Task 3

MWH is scheduled to complete the third component of Phase 3 of the ORC Pilot Study on February 19 and 20. MWH will collect soil matrix samples from the saturated aquifer zone near the intersection of Reder Road and Colfax Avenue using direct push technology.

Design Refinements

MWH has revised the layout of air-line Group 1 that connects a portion of the DPE wells to the blower shed in the On-Site Area in order to utilize the trenches already cut through the gravel road. The result is that the one-inch diameter air-line will cross the three-inch vapor extraction line at one additional location. This will not alter the performance of the system.

MWH has also revised the installation of the six air sparge wells. The original plan was to flush mount only three of the air sparge wells. With this modification, all six will be flush-mount wells. In addition, MWH will be adding an extra ball valve at each air sparge well and the one-inch airline will directly connect to the well at the top of clay via a stainless steel "T" section. Originally the airlines were shown as connecting via a saddle at the bottom of clay. This design refinement will result in less complex installation and also give MWH greater operational control of the system.

Looking Ahead

Week of February 10, 2003	• GWTP/ISVE operation • Continue to install conveyance piping, etc. • Start pumping from On-Site Area upgraded BWES
Week of February 17, 2003	• GWTP/ISVE operation • Continue to install conveyance piping, etc.
Health and Safety Items to Monitor	On-Site ISVE Piping Installation • Welding pipe • Inerting and tapping wells • Slips, trips, falls (especially in ice/snow and around SVE wells) • Temperature/hypothermia • Safe winter driving • Pressure testing of pipes (especially at pressures of up to 150 psi)

Next Weekly Construction Meetings

- Thursday, February 13, 2003

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Weekly Oversight Summary Report No. 102
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of February 10, 2003.
BVSPC O/S Dates: February 13, 2003 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	2	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	2	ONCA SBPA ISVE System Yard Piping Contractor
Austgen	1	Electrical Contractor
Vidimos	1	OFCA ISVE System Scrubber Metal Fabricator
Ryan Construction	2	General Contractor

Construction Activities

Major Activities:

- Independent Environmental Services completed installing the piping to the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system air sparge points and pressure testing all of the yard piping.
- Montgomery Watson Harza began extracting groundwater from the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Vidimos installed a second primary quench bar in the Off-Site Containment Area in-situ soil vapor extraction system scrubber.
- Ryan Construction reassembled the Off-Site Containment Area in-situ soil vapor extraction system thermal oxidizer and scrubber.
- Montgomery Watson Harza held the weekly construction coordination meeting on February 13, 2003.

Activities Performed:

Independent Environmental Services (IES) connected the piping from the On-Site Containment Area (ONCA) Still-Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system blower shed to the six air sparge wells. IES and Montgomery Watson Harza (MWH) completed pressure testing the air supply lines to the dual phase extraction (DPE) wells and the air sparge wells by maintaining 150 psi of

pressure in each line for a minimum of 15 minutes. MWH reported that it postponed IES' construction activities to February 19, 2003, because of the inclement weather. MWH also reported that IES will complete connecting the vapor conveyance piping within approximately 1 week.

MWH shut down the Off-Site Containment Area (OFCA) ISVE system on February 4, 2003, and inspected the scrubber last week. MWH decided to redesign the scrubber sump and quench system to minimize the high temperature levels in the unit and the resulting corrosion. On February 10, 2003, Vidimos replaced the original primary quench nozzle and installed a second primary quench nozzle for the unit with replacement nozzles fabricated from Hastelloy. Ryan Construction reassembled the unit on February 11, 2003. MWH reported that it would schedule a second shut down of the OFCA ISVE system in order for Vidimos to install upgrades to the redesigned scrubber sump. MWH reported that it will also perform a thorough inspection of the scrubber packing at that time. MWH reported that it believes that the packing is in good condition and that there may be calcified water deposits within the interstices of the packing. MWH brought the thermal oxidizer and scrubber up to operating temperature on Wednesday, February 12, 2003, and encountered difficulties with restarting the system. Austgen was on-site on February 13, 2003, and reconfigured the manual stop for the system within the control locks, and MWH restarted the unit early on February 13, 2003.

On February 10, 2003, MWH tested the 18 perimeter ONCA SBPA ISVE system DPE wells. MWH reported that it was able to confirm flow from 16 of the DPE wells. MWH believed that it was unable to establish flow from the remaining two wells because of the presence of product in one well and a potentially clogged air line in the second well. MWH did not test the three centrally located DPE wells because the discharge piping from the wells surfaces above ground at the blower shed concrete slab prior to discharge to the groundwater treatment plant (GWTP). MWH believes that there is a potential for these lines to freeze based on the cold weather conditions.

MWH operated the GWTP at 25 gpm. MWH began operating a portion of the ONCA SBPA DPE wells on Tuesday, February 11, 2003. MWH began operating five wells spatially distributed throughout the ONCA SBPA. After pumping from these wells, MWH added a second group of five wells, and the GWTP catalytic oxidizer unit shut down because the air stream exceeded the high temperature limit. MWH then decided to operate only the western DPE wells and that it would add eastern wells as possible. MWH decided that this would be the best option since the western firepond area is likely less contaminated than is the eastern SBPA. MWH operated nine DPE wells during the week and was able to pump approximately 15 gpm from the wells. Simalabs collected a sample from the water pumped from the ONCA SBPA ISVE system area on February 13, 2003, during routine GWTP sampling activities.

MWH reported that Task 3 of the South Area ORC Pilot Study Work Plan is scheduled for February 19 and 20, 2003. MWH will be collecting soil samples via direct push technology for chemical analysis.

MWH held the weekly construction coordination meeting on February 13, 2003.

Topics of Concern:

- MWH reported that there are two thin areas of the ONCA SBPA interim cover where the thickness of the clay is less than the design thickness. Based on Hard Hat Services, Inc.'s

clay sample for the ONCA SBPA interim cover, the permeability of the clay does not meet the design requirements.

Concern Resolution:

- MWH proposed to collect two samples from the ONCA SBPA interim clay cover for permeability testing. MWH reported that it will be scheduling sampling activities over the next few weeks.

Upcoming Activities:

- Area Survey to resurvey P-36 and MW-10C.
- IES to complete placing the geotextile over the ONCA SBPA interim cover.
- IES to tap into the ONCA SBPA ISVE system vapor extraction wells.
- MWH to inspect the OFCA ISVE system scrubber packing.
- Vidimos to fabricate a replacement OFCA ISVE system scrubber sump.
- MWH to test the permeability of the ONCA SBPA interim clay cover.

Signature: Leigh Peters Date: February 28, 2003

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WEEKLY CONSTRUCTION MEETING MINUTES FOR FEBRUARY 13, 2003 MEETING AMERICAN CHEMICAL SERVICE, NPL SITE GRIFFITH, INDIANA

MEETING DATE: Thursday, February 13, 2003

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:
Rob Adams – MWH (via phone)
Chris Daly – MWH (via phone)
Lee Orosz – MWH
Todd Lewis – MWH (via phone)
Tom Tinics – MWH (via phone)
Travis Klingforth – MWH (via phone)
Jon Pohl – MWH (via phone)
Kevin Adler – U.S. EPA (via phone)
Leigh Peters – BVSPC
Mark Travers – Environ (via phone)

TOPICS:

Health and Safety Summary

No health and safety incidents have occurred at the Site since the last weekly meeting on February 6. Ryan Construction and Independent Environmental Services (IES) have performed work on the site since the last meeting.

Groundwater Treatment Plant (GWTP) Status

The GWTP has been operating normally since the last meeting on February 6. The current flow rate is 25 gallons per minute (gpm).

MWH has achieved substantial completion of the On-Site Barrier Wall Extraction System (BWES) upgrades, an important milestone in the implementation of the Final Remedial Design. MWH began bringing in groundwater from the upgraded BWES system on February 11. Initially, the liquid extraction components of the dual-phase extraction (DPE) wells were activated in groups of five wells. MWH used the groupings to control and maximize the influent flow rate while avoiding overwhelming the GWTP's catalytic oxidizer with too much contaminant loading from the aeration tank (T-102). Currently eight DPE wells are in operation to pump approximately 15 gpm of groundwater to the GWTP.

In-Situ Vapor Extraction (ISVE) System – Off-Site Area

Maintenance and repair was performed on the Off-Site Area ISVE system thermal oxidizer from February 5 to 13. Vidimus Company repaired the unit and Ryan Construction reassembled it. The thermal oxidizer was restarted on February 13.

MWH has focused on operating the same set of 17 ISVE wells for the past three months to establish baseline data for these wells. As part of phase two of the Off-Site Area ISVE system operation, MWH will be increasing system monitoring and finalizing a plan to fine-tune the system as needed. MWH plans to shift to drawing influent vapors from a new set of ISVE wells on February 17.

On-Site Area ISVE System

As discussed above, MWH began pumping from the upgraded On-Site Barrier Wall Extraction System (BWES) on February 11. (Only the water extraction component is currently operating. The vapor extraction component will be activated after the rest of the On-Site Area ISVE components have been installed and tested.)

IES will next install one-inch diameter airlines to each of the six air sparge wells and pressure test these lines. After the 21 DPE wells have begun extracting groundwater, IES will continue tapping the remaining ISVE wells and bolting the three-inch diameter vapor extraction lines to the saddle at each well.

MWH continues to finalize the designs and work with the suppliers for the new thermal oxidizer/scrubber unit and On-Site Area blower sheds. The blower shed building is scheduled to arrive on site April 1, 2003.

Austgen Electric is scheduled to install new power poles and electrical lines between the GWTP and the blower shed pad during February. These will deliver power to the future blower shed and ISVE system equipment.

On-Site Area Interim Cover

MWH plans to resample clay from the interim cover during February to verify the low permeability of the material used.

ORC Pilot Study Phase 3, Task 3

MWH is scheduled to conduct the third component of Phase 3 of the ORC Pilot Study on February 19 and 20. MWH will collect soil matrix samples from the aquifer zone near the intersection of Reder Road and Colfax Avenue using direct push technology. MWH has notified the town of Griffith and will use traffic cones and other appropriate safety measures during sample collection.

Design Refinements

MWH has revised the installation of the six air sparge wells. The original plan was to flush mount only three of the air sparge wells. With this modification, all six will be flush-mount wells. In addition, MWH will be adding an extra ball valve at each air sparge well and the one-inch airline will directly connect to the well at the top of clay via a stainless steel "T" section. Originally the airlines were shown as connecting via a

saddle at the bottom of clay. This design refinement will result in less complex installation and also give the operator greater operational control of the system.

Looking Ahead

Week of February 17, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation • Continue to install conveyance piping, etc. • DPT sampling in Reder Road area for Phase 3 of the ORC Pilot Study
Week of February 24, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation • Continue to install conveyance piping, etc.
Health and Safety Items to Monitor	Items include: • Inerting and tapping wells • Slips, trips, falls (especially in ice/snow and around SVE wells) • Temperature/hypothermia • Safe winter driving • ORC Soil Sample Collection • Traffic safety/ hi-visibility vests • Operation of On-Site Area BWES Upgraded System • Vapors in ISVE wells

Next Weekly Construction Meetings

- Thursday, February 20, 2003

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Weekly Oversight Summary Report No. 103
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of February 17, 2003.
BVSPC O/S Dates: February 19 and 20, 2003 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	8	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	3	ONCA SBPA ISVE System Yard Piping Contractor
Mid-America Drilling	1	Drilling Contractor

Construction Activities

Major Activities:

- Independent Environmental Services completed connecting the yard piping to the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system dual phase extraction wells.
- Montgomery Watson Harza began operating a new set of wells for the Off-Site Containment Area in-situ soil vapor extraction system on February 17, 2003.
- Montgomery Watson Harza conducted Task 3 of the *Work Plan for Phase 3 Investigation Oxygen Release Compound (ORC) Pilot Study.*
- Montgomery Watson Harza held the weekly construction coordination meeting on February 20, 2003.

Activities Performed:

Independent Environmental Services (IES) connected the yard piping from the On-Site Containment Area (ONCA) Still-Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system blower shed to the 21 dual phase extraction (DPE) wells. IES will begin tapping into and connecting the yard piping to the remaining vapor phase extraction wells next week. Montgomery Watson Harza (MWH) reported that it expected the yard piping to be completed by the end of next week. MWH also reported that it was requiring IES to tighten the bolts at the yard piping connections to the well saddles to 75 ft-lbs of torque, rather than its original requirement of 100 ft-lbs. IES had reported that the teflon gasket began deforming at the higher torque requirement. MWH decided that it would lessen the torque requirement in order to maintain the integrity of the gasket.

MWH began pulling vapors from a new set of Off-Site Containment Area (OFCA) ISVE system wells on February 17, 2003. MWH put 16 new wells on-line and monitored the system performance daily according to the *Performance Standard Verification Plan.* Weekly monitoring of the system will begin next week.

MWH conducted soil sampling using direct push technology for Task 3 of the *Work Plan for Phase 3 Investigation Oxygen Release Compound (ORC) Pilot Study.* Mid-America Drilling installed soil probes in nine locations near the intersection of Colfax Ave. and Reder Rd. MWH observed dark staining in several probes near the water table. MWH screened samples with a photoionization detector and submitted soil samples for the following analyses: volatile organic compounds, diesel range organics, gasoline range organics, and total organic carbon.

MWH reported that the groundwater treatment plant (GWTP) operated at 25 gpm, extracting from all available sources and a portion of the ONCA SBPA ISVE system DPE wells. MWH reported that routine maintenance activities were conducted in the GWTP.

MWH held the weekly construction coordination meeting on February 20, 2003.

Topics of Concern:

- MWH reported that there are two thin areas of the ONCA SBPA interim cover where the thickness of the clay is less than the design thickness. Based on Hard Hat Services, Inc.'s clay sample for the ONCA SBPA interim cover, the permeability of the clay does not meet the design requirements.

Concern Resolution:

- MWH proposed to collect two samples from the ONCA SBPA interim clay cover for permeability testing. MWH reported that it will collect the samples on February 28, 2003.

Upcoming Activities:

- Area Survey to resurvey P-36 and MW-10C.
- IES to complete placing the geotextile over the ONCA SBPA interim cover.
- IES to tap into the ONCA SBPA ISVE system vapor extraction wells.
- MWH to inspect the OFCA ISVE system scrubber packing.
- Vidimos to fabricate a replacement OFCA ISVE system scrubber sump.
- MWH to test the permeability of the ONCA SBPA interim clay cover.

Signature: Leigh Peters Date: February 28, 2003

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WEEKLY CONSTRUCTION MEETING MINUTES FOR FEBRUARY 20, 2003 MEETING AMERICAN CHEMICAL SERVICE, NPL SITE GRIFFITH, INDIANA

MEETING DATE: Thursday, February 20, 2003

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:
Peter Vagt – MWH
Rob Adams – MWH
Chris Daly – MWH
Lee Orosz – MWH
Todd Lewis – MWH
Tom Tinics – MWH
Jon Pohl – MWH
Kevin Adler – U.S. EPA (via phone)
Leigh Peters – BVSPC
Mark Travers – Environ (via phone)

TOPICS:

Health and Safety Summary

There were no health and safety incidents at the Site since the last weekly meeting on February 13. Independent Environmental Services (IES) has performed work on the site since the last meeting.

Groundwater Treatment Plant (GWTP) Status

The GWTP has been operating normally since the last meeting on February 13. The current flow rate is 25 gallons per minute (gpm). All available sources for extraction of groundwater are active with the exception of some of the SBPA dual phase wells. MWH is currently evaluating methods to bring more dual phase wells on line without overwhelming the catalytic oxidizer.

In-Situ Vapor Extraction (ISVE) System – Off-Site Area

For the past three months, MWH has been extracting vapors from 17 ISVE wells and monitoring system parameters to evaluate system capabilities. On February 17, MWH switched to a different set of 16 ISVE wells. When activating the new wells, the potential exists for an increase in the thermal oxidizer chamber temperature, indicating VOC saturated vapors near the well. After the February 17th switch was made, no increase in chamber temperature was noted. MWH plans to operate this new subset of wells for one month and will continue to monitor per the PSVP.

On-Site Area ISVE System

MWH continues to connect 3-inch diameter vapor extraction piping to the ISVE wells using saddles. This task is scheduled for completion by February 28.

Delivery of the blower system is scheduled for April 1. Shop drawings are to be available for MWH review in late February/early March.

The thermal oxidizer and scrubber system is scheduled to be delivered in mid-April following a test firing of the unit at Global's facility. MWH has received electrical drawings, a process and instrumentation diagram, and a revised system layout for the thermal oxidizer and scrubber. MWH will be installing a fan and stack platform to support the scrubber system.

The scope of work for electrical installation for the ISVE system has been forwarded to Austgen Electric. Austgen Electric is scheduled to install new power poles and electrical lines between the GWTP and the blower shed pad during February. These will deliver power to the future blower shed and ISVE system equipment.

On-Site Area Interim Cover

MWH plans to resample clay from the interim cover during February to verify the low permeability of the material used.

ORC Pilot Study Phase 3, Task 3

MWH is conducting the third component of Phase 3 of the ORC Pilot Study on February 19 and 20. MWH is collecting soil matrix samples from the aquifer zone near the intersection of Reder Road and Colfax Avenue using direct push technology. Four geoprobe locations were completed on February 19; five more were completed on February 20. Soil cuttings, totaling four five-gallon buckets, from this activity have been placed in areas near the SBPA ISVE wells, which are currently exposed below the clay cap.

Design Refinements

During the meeting, the torque value for tightening bolts on flanges at the ISVE wells was revised from 100 ft-lb to 45 ft-lb because of concern that overtightening could damage gaskets between the flanges.

Note: Following the meeting, MWH determined the torque value will be based on flange manufacturer's recommended value.

Looking Ahead

Week of February 24, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation • Continue to install conveyance piping, etc. • Collect clay samples from SBPA interim cover
Week of March 4, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation • Continue to install conveyance piping, etc.
Health and Safety Items to Monitor	Items include: • Inerting and tapping wells • Slips, trips, falls (especially in ice/snow and around SVE wells) • Temperature/hypothermia • During power pole installation, all personnel except the spotter will be 40-hour trained. • Overhead dangers during power pole installation

Next Weekly Construction Meetings

- Thursday, February 27, 2003

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Weekly Oversight Summary Report No. 104
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of February 24, 2003.
BVSPC O/S Dates: February 27, 2003 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	2	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	3	ONCA SBPA ISVE System Yard Piping Contractor
Austgen	1	Electrical Contractor

Construction Activities

Major Activities:

- Independent Environmental Services began tapping into the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system vapor phase extraction wells and connecting the yard piping.
- Austgen and Montgomery Watson Harza marked the locations of the utility poles to be installed between the groundwater treatment plant and the future On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system blower shed.
- Montgomery Watson Harza collected two samples from the On-Site Containment Area Still Bottoms Pond Area interim clay cover for geotechnical analysis.
- Montgomery Watson Harza held the weekly construction coordination meeting on February 27, 2003.

Activities Performed:

Independent Environmental Services (IES) began tapping into the On-Site Containment Area (ONCA) Still-Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system vapor phase wells. IES plugged the well with an inflatable plug and purged the well with nitrogen prior to tapping into the well. IES performed air monitoring with a photoionization detector and an oxygen and lower explosive limit meter. After installing the saddles on the wells, IES proceeded to connect the HDPE yard piping to the saddles with 75-ft-lbs of torque on the bolts. IES reported that it should complete tapping into the vapor phase wells and complete the yard piping installation by the end of next week.

Austgen and Montgomery Watson Harza (MWH) marked the locations of the utility poles to be installed between the groundwater treatment plant (GWTP) and the future ONCA SBPA ISVE system blower shed. Austgen reported that the utility poles will be 35-foot-tall wooden poles, installed at a depth of approximately 5 feet below ground surface. MWH reported that the utility poles will be installed on March 3, 2003.

MWH reported that it collected two clay samples from the ONCA SBPA clay interim cover for permeability analysis. The additional clay samples were collected to evaluate whether the permeability of the clay meets the design requirements.

MWH reported that the GWTP operated at 25 gpm, extracting from all available sources except for some of the ONCA SBPA ISVE system dual phase extraction (DPE) wells. MWH reported that the air stream from the aeration tank continued to exceed the high temperature limit of the catalytic oxidizer because of the high Btu volatile organic compounds that were extracted from the ONCA SBPA. MWH reported that it is evaluating bypassing the catalytic oxidizer unit and processing the air stream from the aeration tank in the Off-Site Containment Area (OFCA) ISVE system thermal oxidizer and scrubber. MWH reported that the OFCA ISVE thermal oxidizer and scrubber have sufficient capacity to process both the aeration tank vapor stream and the current flow from the OFCA well field. MWH continued to operate the OFCA ISVE system without incident. MWH reported that Ryan Construction is scheduled to install a sump around the OFCA and future ONCA thermox units at the GWTP.

MWH reported that the semi-annual groundwater sampling event is scheduled for the week of March 24, 2003. MWH reported that all 32 wells in the groundwater sampling program will be sampled for a full scan of Target Compound List/Target Analyte List parameters.

MWH held the weekly construction coordination meeting on February 27, 2003.

Topics of Concern:

- MWH reported that there are two thin areas of the ONCA SBPA interim cover where the thickness of the clay is less than the design thickness. Based on Hard Hat Services, Inc.'s clay sample for the ONCA SBPA interim cover, the permeability of the clay does not meet the design requirements.

Concern Resolution:

- MWH reported that it collected two samples from the ONCA SBPA interim clay cover for geotechnical analysis on February 28, 2003.

Upcoming Activities:

- Area Survey to resurvey P-36 and MW-10C.
- IES to complete placing the geotextile over the ONCA SBPA interim cover.
- IES to complete tapping into the ONCA SBPA ISVE system vapor extraction wells.
- MWH to inspect the OFCA ISVE system scrubber packing.
- Vidimos to fabricate a replacement OFCA ISVE system scrubber sump.
- MWH to evaluate the permeability of the ONCA SBPA interim clay cover.

- Ryan Construction to install a sump around the OFCA and future ONCA thermox units.
- MWH to perform the semi-annual groundwater sampling event.

Signature: Leigh Peters Date: February 28, 2003

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WEEKLY CONSTRUCTION MEETING MINUTES FOR FEBRUARY 27, 2003 MEETING AMERICAN CHEMICAL SERVICE, NPL SITE GRIFFITH, INDIANA

MEETING DATE: Thursday, February 27, 2003

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:
Peter Vagt – MWH (via phone)
Travis Klingforth – MWH (via phone)
Chris Daly – MWH
Lee Orosz – MWH
Chad Smith – MWH (via phone)
Todd Lewis – MWH (via phone)
Jon Pohl – MWH (via phone)
Kevin Adler – U.S. EPA (via phone)
Leigh Peters – BVSPC
Mark Travers – Environ

TOPICS:

Health and Safety Summary
There were no health and safety incidents at the ACS Site since the last weekly meeting on February 20.

Groundwater Treatment Plant (GWTP) Status
The GWTP has been operating normally since the last meeting on February 20. The current flow rate is 25 gallons per minute (gpm). All available sources for extraction of groundwater are active with the exception of some of the Still Bottoms Pond Area (SBPA) dual phase wells.

MWH is currently evaluating methods to bring more SBPA dual phase wells on line without overwhelming the catalytic oxidizer. The catalytic oxidizer continues to operate intermittently based on influent contaminant concentrations from the SBPA dual phase wells. MWH is planning to install additional piping to be able to by-pass the catalytic oxidizer. This by-pass piping would allow off-gas from the GWTP to be treated in the thermal oxidizer (instead of the catalytic oxidizer) until the initial peak of the SBPA contamination has been treated.

Ryan Construction is scheduled to construct a sump near the catalytic and thermal oxidizers during March or April to collect condensation from the units.

In-Situ Vapor Extraction (ISVE) System – Off-Site Area

On February 17, MWH switched to a different set of ISVE wells. MWH plans to operate this new subset of 16 ISVE wells for one month and will continue to monitor in accordance with the PSVP. Daily monitoring was conducted during the week of February 17. Weekly monitoring began the week of February 24.

On-Site Area ISVE System

MWH continues to connect three-inch diameter vapor extraction piping to the ISVE wells using saddles. This task is scheduled for completion by March 7, however this task is weather dependent.

Austgen Electric is scheduled to install new power poles and electrical lines between the GWTP and the blower shed pad beginning on February 28. These will deliver power to the future blower shed and ISVE system equipment.

On-Site Area Interim Cover

MWH plans to resample clay from the interim On-Site area cover on February 28 to verify the low permeability of the material used.

ORC Pilot Study Phase 3, Task 3

MWH conducted the third component of Phase 3 of the ORC Pilot Study on February 19 and 20. MWH collected soil matrix samples from the aquifer zone near the intersection of Reder Road and Colfax Avenue using direct push technology (DPT). Four geoprobe locations were completed on February 19. Five more were completed on February 20. The soil cuttings from this activity were collected in four five-gallon buckets. These cuttings have been placed in areas near the SBPA ISVE wells where the cover material has been removed. When the cover is replaced, the soil cuttings will be contained beneath the On-Site clay cover, inside the ISVE area. Purged groundwater was placed into the GWTP for treatment.

Preliminary observations made during the DPT activities suggest the primary zone of contamination in this area is the upper portion of the water table. Analytical results will be received from the laboratory in two to three weeks and will be included in a future monthly status report. A write up of the Phase 3 ORC Investigation will be completed later.

Groundwater Monitoring

The March 2003 Groundwater Monitoring Event is scheduled for March 24 to 28. All 32 wells in the groundwater sampling network will be sampled for the full-suite of analytes, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), inorganics, and pesticides/PCBs.

Design Refinements

No design refinements were made that needed to be discussed during this meeting.

Looking Ahead

Week of March 3, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation • Continue to install conveyance piping, etc.
Week of March 10, 2003	• GWTP/ISVE operation • On-Site Area BWES Upgrade operation
Health and Safety Items to Monitor	Items include: • Inerting and tapping wells • Overhead utilities • Slips, trips, falls (especially in ice/snow and around SVE wells) • Temperature/hypothermia • During power pole installation, all personnel except the spotter will be 40-hour trained. • Overhead dangers during power pole installation

Next Weekly Construction Meetings
Thursday, March 6, 2003

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1/30/03

MWH patched with fiberglass and working with Vidmos to reconstruct a hastelloy sump. Checking patch visually and physically. Still scheduling inspection over next few weeks. MWH to switch wells after repair; MWH collecting final sample from first group today.

ONCA. All of DPE wells cut down and penetrations drilled. IES to install fittings and air line. MWH to start pumping by next thursday. MWH reviewing PID from Global - expect Thermox/scrubber submittal soon. Eliteway to provide drawings. MWH expects 2 wks of work remaing on ONCA before gravel.

Design Refinements: MWH has not scheduled date of collecting 2 additional clay samples on ONCA.

Look Ahead: GWTP/OFCA ISVE operation SDPA ISVE yard piping.

Next Mtg: February 6, 2003.

1030 Mtg Concluded

1050 Met w ONCA IES re coiling HDPE air line. Spoke with L Campbell re site activities

1110 left site for day

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2/5/03

0735 Arrive on site, 410°F, forecast mid 20s, Clear, SW wind

Personnel Present:

Lee Orosz	MWH
Lane DeBartolo	IES
Mike Petric	IES
Tom Evers	Ryan
Jerry Clark	Ryan
Leigh Peters	tgrSPC

Activities today:

1. Ryan disassembling OFCA ISVE scrubber
2. IES install bulkhead fittings & pumps for ONCA ISVE DPE wells.

0755 Met to ONCA - Observed IES connecting fitting at SVE-48 and install pump. IES reported that it isn't observing any odors from wells - Area cleared by Eagle.

0815 Roll #6 Photo 1 facing S of IES installing bulkhead fitting on SVE-46

0825 Observed Ryan beginning to disassemble scrubber. MWH measured temperature of scrubber during operation and marked shell temp at failed welds were 175°F on lower location and 133° at location near packed tower

1830 Returned to ONCA to observe IES

[signature]

2/5/03

0840 Roll 36 Photo 2 facing W of IES placing pump at SVE-50

0845 Roll 36 Photo 3 facing W of IES installing bulkhead fitting at SVE-58. Pitless adapter connected to pump in foreground.

0905 Roll 36 Photo 4 facing W of IES placing pump in SVE 80

0930 observed Ryan continue to disassemble scrubber - manlift on-site for work

0940 Roll 36 Photo 5 facing W of Ryan disassembly.

0945 Returned to ONCA and observed IES install pumps

~~1000~~ 1030 observed Ryan removing ducting from thermox to scrubber

1050 Roll 36 Photo 6 facing W at Ryan removing ductwork.

1056 Roll 36 Photo 7 facing N at ground at corroded spray nozzle.

1100 L. Orosz reported that the precipitated solid build-up was likely a calcium build-up. MWH to give sample to Durr. Durr to be on-site tomorrow. dark staining present on inside of scrubber where heat is greatest and the welds failed last week.

[signature]

[signature]

2/5/03

1105 - Returned to ONCA observed IES complete installing the DPE pumps. IES installed pumps in all wells except SVE-55 because of significant water in excavation around well. IES to weld air line rest of day. IES hopes to pressure test tomorrow afternoon, if not, on Friday.

1130 Returned to GWTP, Ryan decomming ducting.

1145-1230 Left Site for lunch

1235 Went to ONCA observed IES place pump in SVE55

1300 IES beginning to weld HDPE - 1 inch dia air line to DPE wells. L Orosz reported MWH hoping to start pumping from DPE wells on Tuesday next week. MWH to hold off for pumping from central wells until weather improves.

1330 Roll 36 Photo 8 facing SE of IES installing air line connection to HDPE ~~at~~ ~~DPE~~ DPE well SVE-50.

1405 Roll 36 Photo 9 facing SW of IES welding air line tee to SVE-43.

1445 Observed that the air line to SVE-48 crosses over the 3 inch vapor lines - Design refinement? crosses vapor line to SVE47.

1510 IES completed Air supply line #1 - IES done for day.

1515 Left site for day

[signature]

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2/6/03 Leigh Peters

0800 Arrive On-site. SE wind, 20°F

Personnel Present:

* Lee Orosz MWH
Lane DeBartolo IES
Tom Evans Ryan
Mike Petrich IES
Jerry Clark Ryan
* Todd Lewis MWH
* Travis Klingforth MWH
* Leigh Peters BVSPC

Activities Today:

1. IES to continue welding air line
2. Durr to be onsite to inspect scrubber

0805 Roll 36 Photo 10 facing W inside scrubber sump at staining & where highest heat & failing weld locations.

0815 Went to ONGA, observed IES welding air lines in trunk 2. Spoke with Travis Klingforth - he didn't think that the air line crossing vapor line between SVE-7 & SVE-48 warranted a design refinement per se, but MWH aware and plans to minimize air line crosses rather than trenching through gravel.

0845 : IES completed welding ~~trench~~ pipe run 2

Leigh E Peters

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2/6/03 Leigh E Peters

of the air line. MWH prepping to air test the lines.

0930 Went to GWTP. 3 buckets of material removed from scrubber.

0935 Roll 36 Photo 11 facing S at ground at L-R - material from sump, buildup from 90° angle duct work into scrubber, material from ledge inside scrubber sump.

0936 Durr still not on-site.

1000 Weekly Construction Mtg

Attendees - * on previous plus
Chris Daly MWH
via phone: Rob Adams MWH John Pohl MWH
Tom Timics MWH

H+S : no issues - IES & Ryan on-site, MWH cleaned tank - L. Orosz went in tank after cleaned and ventilated

GWTP 23 gpm - MWH hoping to increase flow with DPE wells - controlled by T102 level.

OFCA ISVE : Disassembled unit, 4 streaks of corrosion evident across from air inlet otherwise sump looks ok. Hastelloy sleeve also showing corrosion. Spray bar ok, nozzle corroded, Packing may have rusted at bottom packed column. MWH

2/6/03

evaluating Phase 2 operation of system.

ONCA: Pumps set, IES completing air line hookup today - pressure test at 150 psi for 15 minutes. IES to then connect air sparge points, ~~out~~ out SVE wells in road + attach saddles and yard piping. hoping to place rock end of Feb, early March. thermox + scrubber to arrive end of April. MWH working with Flitway on shed

ORC: Task 3 sampling on 2/19 + 2/20.

Design Refinements: Air line for ONCA ISVE crosses a 3-inch vapor line for area 10 SVE47. air line not placed at perimeter because of did not add trench to road, IES using existing trenches. MWH to schedule collection of clay samples for ONCA cover.

Look Ahead: GWTP; ISVE (w/in 1 week), ONCA ISVE piping

1030 Mtg adjourn, next mtg 2/13/03.

1040 Went to ONCA, MWH beginning to pressure test having difficulties with gauge connection and isn't reaching 150 psi. MWH to reconfigure gauges + valves for testing.

1110 IES completed welding air line for perimeter DPE wells. Only wells left are central wells

2/6/03

for connection to air line

1120 Dunn still not on site, no additional activity with respect to OFC/ISVE system.

1125 MWH using new hose to pressure test, but still leaking at connection. MWH may need to rent equipment. Pressure testing not started. Air line @ at 132 psi, MWH breaking for lunch and will check on pressure then and see what to do about pressurizing to 150 psi.

1145 MWH breaking for lunch, Dunn not on site, MWH does not know where they are, left messages. MWH to work on pressure testing, no other site activities

1450 Left site for day - return to Office.

2/6/03

2/13/03 Leigh E Peters

0735 Arrive on-site - 20°, Partly Cloudy. wind from southwest. Main gate locked - left site to review reports

0815 Return to site - Spoke with L. Orosz, he reported that MWH installed a secondary quench bar in ducting to OFCA ISVE scrubber and began bringing system up to temp yesterday. L Orosz said he tried to start OFCA ISVE remotely from home and this morning but system would not start - Arstgen to come on site and look at control programming. L Orosz also reported that MWH tested 18 perimeter ONCA ISVE DPE wells monday and unable to operate 2 wells. One of wells has thick product, other may have clog in air line. MWH began pumping from wells on tuesday in groups of 5. L Orosz reported that the VOCs coming from ONCA made catox exceed high temp - burning too hot. MWH then began operating west side of well field and is introducing east wells one at a time. Simalabs on-site to collect water samples. L Orosz reported that Kleinfelder

Leigh E Peters

2/13/03 Leigh E Peters

to be onsite to look at ONCA blower shed foundation and to take extra blower from ONCA to OFCA blowershed.

0850 Went to ONCA - IES has connected air sparge points on Monday. IES to return next wednesday to tap into SVE wells and connect vapor piping. L. Orosz reported ~ 1 week of work.

0852 Roll 36 Photo 12 facing west at ground at connection at AS-3.

0855 Roll 36 Photo 13 facing west of temporary air supply from GWTP to pneumatic DPE pumps at blower shed foundation

0905 Personnel Present:

Leo Orosz	MWH
Leigh Peters	BVSPC
Mike Chenowith	Simalabs
Kevin Falvey	Simalabs
Rich Flores	Arstgen

0915 Spoke with Rich Flores - he reported blower on - to change program. he suspected that the stop button was enacted too many times in succession and put glitch in start up.

0918 Roll 36 Photo 14 facing west of the two quench bars in ducting to OFCA scrubber

Leigh E Peters

2/13/03

Earlier, L. Orosz reported scrubber packing was not wetted, but appeared that there were calcium solids built up in interstices between packing - not on packing itself. He also reported MWH to reinspect all packing in the near future when Vidimos to repair sump.

925-950 Review MWH reports

1000 Wkly Construction Meeting.

Attendees - X on previous plus via phone:

Peter Vagt	MWH	Rob Adams	MWH
Todd Lewis	MWH	Chris Daly	MWH
John Pohl	MWH	T Klingforth	MWH
Mark Travers	Environ	Kevin Adler	EPA

H+S: No incidents, minimal construction activities

GWTP: up at 25 gpm, 10 gpm from BWES 15 gpm from ONCA SVEA.

OFCA, IVE: Vidimos repaired damage to go and added quench bar on Monday. Ryan reassembled tuck and system on-line this morning with original 17 wells, after fixing start up. MWH to shut system down again in couple of weeks for Vidimos to

2/13/03

complete upgrades - MWH to check packing completely then.

ONCA: IES completed all pressure testing and AS points complete. Initial pumping from 10 spatially selected wells gave high temp in catox. MWH pumping from west wells and will add as necessary. MWH looking into sampling VOCs from aeration tank into catox. MWH reported it reached substantial completion on ONCA BWES upgrades this week. MWH finalizing blowers/heat and Thermox designs.

Look Ahead: IES out next week weather permitting to complete yard piping will need to wait on weather for backfilling around wells. Avistgen to set power poles. ORC 2/19 - 2/20.

Retracements: AS all flushmount w/ well vaults.

H+S: ORC sampling next week - spoils to be placed in ONCA at excavated locations around well + under cap. MWH to ventilate DPE wells during on/off changes

1045 Mtg Conclude - next mtg 2/20/03 @ 10AM

1045-1050 Spoke with L. Campbell on site activities.

1100 - No other site activities for today. Left site to return to office

2/19/03 Leigh Peters

0720 Arrive on-site, Cloudy, 25°F, Wind from West.

Personnel on-site

Lee Grosz	MWH
Rudy Stein	MWH
Travis Klingforth	MWH
Mike Petrich	IES
Lance DeBartolo	IES
Terrence Jones	IES
Leigh Peters	BVSPC

0730 Spoke with T. Klingforth, Activities for today:
1. IES tap into vapor wells, begin connecting saddles to yard piping
2. C. Smith to soil sample for Task 3 of ORC Study.

0740 Went to ONCA - Observed IES digging frozen ground from SVE-BO to connect piping to saddle. IES brought out jack hammer.

0756 Roll 36 Photo 15 facing S of IES using jackhammer at SVE-BO.

0800 IES excavated out saddle at SVEBO. M. Petrich of IES reported that he did not observe any odor other than that of the surrounding

2/19/03 Leigh Peters

area. IES blow out line prior to connecting.

0810 Roll 36 Photo 16 facing SW of IES connecting yard piping to SVE-BO.

0820 IES completed attaching yard piping to SVE-BO. Bolts tightened to 45 lb-ft on torque wrench. I advised T. Klingforth that IES should pay attention to our monitoring if observe any odor at minimum.

0830 Went to OF-CA, Mid American setting up to start geoprobing. Using truck mounted geoprobe. Soil samples to be analyzed for VOCs, DRO, GRO, TOC, COD. MWH to sample 5 locations and up to 12 soil samples.

0845 C. Smith reported that he gave to L. Grosz the driller (Jeff) H+S documentation. C. Smith also reported that L. Grosz showed him where the barrier wall is located and that he will stay outside of wall.

0855 MWH began probing at SBPT-1

0930 Roll 36 Photo 17 of sample from 20-24' with 20' closest. Photo facing NE ground water at 22', PID at 20 ppm.

1000 Sample at 32 ft bgs with PID of 4.40 ppm gray wet sands - still not wet clay.

2/19/03

1020 MidAmerica collecting discrete sample from 36-46 ft. Hit clay at 36.5 to 37 ft bgs. PID of 700 ppm at base of aquifer, but no or minimal odor observed.

1045 Roll 36 Photo 18 facing E of MWH collecting VOC sample with Encore sampler: sample interval from 26-27 ft bgs.

1055 MidAmerica began drilling at SDPT-02.

1100 Went to ONCA, C. Daly reported new set of wells on-line for OFCA ISVE since monday, 17-18 wells, No spikes observed in system. Went to SDPA, observed IES connecting yard piping to DPE wells. IES jackhammering frozen ground at SVE 49

1120 Roll 36 Photo 19 facing N of gasket installed in between yard piping flange and saddle at wells.

1125 MWH monitored breathing zone with PID at SVE-49. Peak observed at 0.3 ppm.

1150-1220 left site for lunch.

1225 Returned to OFCA to observe sampling at SDPT-02. C. Smith reported that he observed dark staining at 22' bgs at the water table. MWH did not have

2/19/03

PID to take a reading. Continuing to probe to depth - possibly take second sample. Clay encountered at 33 ft bgs. MWH collecting second sample at 27' bgs.

1250 Roll 36 Photo 20 facing west of MWH collecting sample for TPH - C. Smith reported no COD analysis for solids.

1305-1310 spoke with L. Campbell on the activities.

1315 Observed MWH log back SDPT3

1340 MWH reported PID ~400 ppm at ~19-20 ft bgs on SDPT-3.

1350 Daly 36 Photo 21 facing SE of sample from 20-24' bgs @ SDPT-3. Black staining at 22 ft bgs with PID = 485 ppm.

1355 Roll 36 Photo 22 of 22 ft bgs at SDPT-03. depth of sample.

1410 MWH decided to sample SDPT3 at 19 ft bgs, just above the water table. MidAmerica reported clay at about 26' bgs ~~of~~ 30' bgs. MWH collected sample from 29' bgs.

1495 - complete sampling SDPT03. backfilled hole with bentonite pellets.

1450 start drilling SDPT4 at 12 ft. bgs. Dark staining observed at 18 ft bgs. PID ~400 ppm

2/19/03 [signature]

1510 Roll 36 Photo 23 - facing NW showing MWH collect EnCore sample for VOCs from 18' bgs at SDPT4, MIA America in background drilling SDPT 04.

1545 Sample from 28-32 all clay.

1550 MWH collected sample from 32' bgs.

1600 Left site for day

[signature] 2/19/03

2/20/03 [signature]

0730 Arrive on-site, 30°F, clear, ~~Wind~~ 7P Wind from south
Personnel On-site

Lee Orosz	MWH
Mike Petrich	IES
Chad Smith	MWH
Terrence Jones	IES
Leigh Peters	BVSPC

Activities today:
(1) ORC South Area Pilot Study DPT sampling
(2) ONCA SBPA/SVE yard piping

0740 Spoke with John Pohl - he reported MWH to collect 2 samples from ONCA SBPA interim clay cover for permeability tomorrow. J. Pohl reported he is to identify collection locations today based partially on access to cap. C. Smith waiting for MIA America to arrive on-site for sampling and IES currently off site.

0750 IES back on-site, went to ONCA IES to continue connecting yard piping to DPE wells. IES reported that it connected 10 yesterday and expects to complete today. J. Pohl reported MWH to remove top few inches of clay

[signature]

2/20/03 [signature]

cover and push shelby tube to collect sample for permeability.

0815 Observed MWH set up to probe at SDPT-7

0825 MWH - C. Smith held tool-box H&S mtg. Topics include safety drilling near Colfax and in Reder Rd, Driller to stand upwind and Notify MWH of any odors so MWH can quickly respond and monitor breathing zone with PID. SDPT7 located directly across Colfax from SDPT3 started at 12 ft bgs.

0900 Sample interval ~~12 - 16~~ ft 16-20 ft. Indications of perched water zone, dark staining and odor. - PID at blower shed for PSVP monitoring of OFCA ISVE.

0905 MWH collect sample from 23' bgs at SDPT 7 for analysis. Also collected MS/MSD for VOCs sampling from water table interface - C. Smith noted strong odor

0915 Roll 36 Photo 24 facing N at MWH collecting VOC sample from 23.5' bgs at SDPT 7

0930 Went to OFCA Blowershed and observed MWH perform PSVP sampling. Walls online are: ~~32, 35, 39~~ VP SVE 3-6, 11, 13, 16, 20, 23, 25, 26, 29, 32, 38, 39, 42. VOCs

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2/20/03 [signature]

measured on 2/17/03 ranged from 50 ppm to 1815 ppm.

0935 Roll 36 Photo 25 facing N of MWH sampling differential pressure at header for well 13. MWH balancing flow. Note product in several wells.

0945 C. Daly reported MWH using this time to assess whether they can draw from entire well field w/ cycling groups of wells or if they need to add blower to have all wells on line.

1000 Wkly Construction Mtg

Attendees - * on previous plus

Todd Lewis	MWH	Peter Vogt	MWH
Tom Tinics	MWH	Rob Adams	MWH
John Pohl	MWH	Chris Daly	MWH
Kevin Adler	USEPA	(via phone)	
Mark Travers	Environ	(via phone)	

H&S - No issues, instantaneous spikes during drilling, but no sustained readings. No elevated readings in breathing zone. No incidents - IES working and GWTP maintenance

GWTP - Flow set at 25 gpm. Extracting from all N DPE wells and one E DPE well. MWH evaluating process of adding more wells.

OFCA ISVE - switched to new group of 18 wells

[signature]

2/20/03 [signature]

on Monday - No spike in thermox. Performing daily sampling this week, and collected influent Summa. Will collect analytical samples weekly for a month. MWH to replace recirculation pump.

ONCA: IES connecting 3" vapor piping. backfill related to weather. Blower shed by Flitzway expected April 1, 2003. Thermox + scrubber will fit in GWTP to be delivered mid-April. MWH planning with Austyen on electrical fields.

ORC: probing near Colfax / Reder Rd finding greatest material at water table. Place 9th location in an ORC ~~[illegible]~~ area to see if any impacts spoils place at an excavated wall in ONCA.

Design Refinements: torque 45 ft-lb rather than 100 ft-lb - MWH to further assess.

Look Ahead: GWTP, OFCA ISM-op, ONCA well piping installation. Utility poles to be installed next week for ONCA shed - Driller + Austyen 40-hr trained, spotter will not be. MWH to monitor atmosphere and will coordinate with IES

1035 Mtg conclude - next mtg 2/27/03 at 10 AM

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2/20/03 [signature]

1035-1045 MWH discuss torque on ONCA saddles - to continue to assess. MWH to call gasket supplier.

1045-1100 MWH discussing installation of ONCA scrubber in GWTP -

1105-1125 Spoke with L. Campbell on site activities to check on - Analysis method for ONCA clay sample and type of utility poles + seal

1140 Spoke with John Pohl - he reported MWH to remove 2-4 inches of frozen clay + take + sample in place sample with shelby tube. If still frozen material MWH to have lab compact.

1200 - observed MWH setting up at additional location SDPT9 for sampling of area previously treated by ORC. Blind probe to 16 ft bgs.

1220 Roll 36 Photo 26 facing S at ground of black stained soil from SDPT9 at 19.5-20' bgs. PID of ~7 ppm.

1245 MWH collected sample at 22' bgs, PID ~ 30 ppm

1300-1330 L+H site for lunch

1305 Observed MWH drill at SDPT-06 at intersection of Colfax and Reder Rd

1310 Roll 36 Photo 27 facing S-SE showing probing at SDPT-06, no orange cones and high visibility vests in addition to PPE

[signature]

(160)

2/20/03 JJ & E Peters

1410 Collected sample from 23' bgs at SDPT 06

1415 Went to GWTP. MWH assessing location of new scrubber - W of OFCA ISVE scrubber

1425 Went to ONCA. MWH had reported IES re-welding vapor lines to a few wells for better fit, from slope to well. IES and MWH reported highest PID reading in breathing zone was 0.3ppm.

1435 Roll 57 Photo 1 facing SE of IES welding HDPE to connect to saddle at well.

1450 MWH reported that it was still waiting to hear from manufacturer on torque for gaskets.

1505 Went to OFCA, MWH probing SDPT-5 near stop sign at Reder Rd & Colfax intersection outside of fenceline.

1525 MWH sampling SDPT-05 at 25 ft bgs. - 24 ft bgs. Water table at 24' bgs.

1545 MWH collecting sample from SDPT-06 at 28 ft bgs - fine sands, gray w/ PID

1600 Left Site for day

JJ & E Peters 2/20/03

CURVE TABLES

HOW TO USE CURVE TABLES

Table I. contains Tangents and Externals to a 1° curve. Tan. and Ext. to any other radius may be found nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and External: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table I.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan. or Nat. Ex. Sec.

EXAMPLE

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P. = 23° 20' to the R. at Station 542 + 72.

Ext. in Tab. I opposite 23° 20' = 120.87
120.87 ÷ 12 = 10.07. Say a 10° Curve.

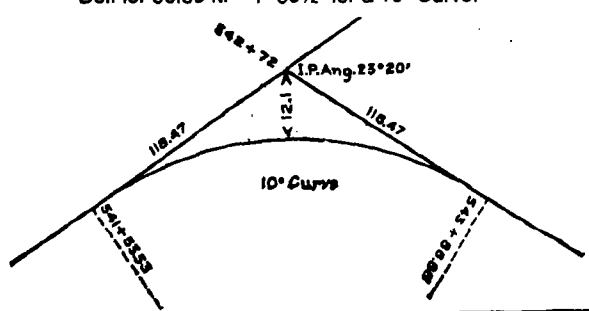
Tan. in Tab. I opp. 23° 20' = 1183.1
1183.1 ÷ 10 = 118.31.

Correction for A. 23° 20' for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20' = 23.33° ÷ 10 = 2.3333 = L. C.

2° 19½' = def. for sta.	542	I. P. = sta.	542 + 72
4° 49½' = " " "	+ 50	Tan. =	1 .18.47
7° 19½' = " " "	543	B. C. = sta.	541 + 53.53
9° 49½' = " " "	+ 50	L. C. =	2 .33.33
11° 40' = " " "	543 + 86.86	E. C. = Sta.	543 + 86.86

100 − 53.53 = 46.47 × 3' (def. for 1 ft. of 10° Cur.) = 139.41' = 2° 19½' = def. for sta. 542.
Def. for 50 ft. = 2° 30' for a 10° Curve.
Def. for 36.86 ft. = 1° 50½' for a 10° Curve.



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PAGE NO.	REFERENCE	DATE

(1)

2/27/03

0240 Arrive on-site, Sunny, clear 20° F, light NE wind

Personnel Present:

Lee Orosz	NAVY
Lane DeBartolo	IES
Dan Petrich	IES
Terrence Jones	IES
Leigh Peters	AVSPC

Activities today

① IES connect to ONCA SVE vapor wells

② Weekly Construction Mtg

0755 Went to ONCA, observed IES set up on well SVE-37. to begin tapping well inerted with nitrogen and plugged. IES jackhammering away frozen ground for clearance for yard piping. Mtg set at IES set up to tap well - PID readings 0.0 ppm.

0820 Roll 37 Photo 2 facing SW of IES tapping into vapor phase well SVE-37.

0845 IES reported that the manufacturer's spec on the gaskets for the yard piping was 100-150 ft-lbs torque. IES also reported that it observed "warping" of the teflon portion of the gasket at 100-ft-lbs of torque. IES reported that it is tightening to 75 ft-lbs of torque for the bolts connecting

2/27/03 Lyle E Peterson

vapor line to saddle.

0900 Roll 37 Photo 3 facing NW showing IES removing gravel from underneath yard piping to SVE 59.

0920 IES completed connecting yard piping at SVE-59. IES began tapping SVE-70

1000 Weekly Construction Meeting

Attendees - * on previous plus:

Chris Daly MWH Mark Travers Environ via phone:

Kevin Adler EPA Peter Vagt MWH

Todd Lewis MWH Jon Pohl MWH

Travis Klingforth MWH Chad Smith MWH

H+S: No incidents - limited construction

GWTP: 25 gpm, catox shut down b/c of high temp from OHCA DOE wells VOCs. MWH investigating bypassing catox and putting voc stream through thermox. Thermox not at capacity and adding catox to not affect OFCA ISVE.

ISVE: running same 16 wells. MWH now on weekly PSVP monitoring.

ONCA: IES tapping wells and connecting yard piping. expect to be done by mid next week. Austgen to be onsite

Lyle E Peterson

2/27/03 Lyle E Peterson

this afternoon for walkthrough for utility poles. Austgen to install poles tomorrow. Polemershed to arrive April, thermox - mid April.

ORC/GW: GW sampling March 24 - all 32 wells, TAL TCL. ORC Phase 3 completed last thursday w/o incident.

Design Refinements: MWH to collect clay sample Friday.

Look Ahead: GWTP op, catox - thermox bypass. Ryan to install sumps around thermox + catox.

H+S: overhead utilities, hotel tapping

1030 Mtg conclude: Next Mtg 3/6/03 @ 1000

1050 went to GWTP thermox at 1500°F, scrubber temp at 60°F, pH ~ 7.8

1100 went to ONCA. IES completing SVE-70, IES getting ready to drill at SVE-71.

1120 Roll 37 Photo 4 facing SW at IES installing saddle on SVE-71 after tapping well.

1125 IES monitored at SVE-71 PID = 0.0 ppm at saddle to well.

1136 IES left for lunch. I went to GWTP and asked L. Orosz if IES should have nitrogen tank secured. He said yes and that he will either have IES secure the tank or lay it on its side.

Lyle E Peterson

(4)

2/27/03

1150 - 1250 Left site for lunch - Wait for IES to return - work on field report

1250 Return to ONCA + observe IES tap into vapor wells. IES had to cut HDPE pipe to SVE-71 in order to connect saddle. IES reported that they were trained today on thermal butt fusion welding and are certified to weld. Previously, M. Petrich was the only certified welder

1320 Austgen on-site - walked through utility pole siting. Poles to be wood, 7' in ground with 30' stickup.

1410 IES setting up to tap SVE-74.

1440 IES tapped into SVE-74.

1510 Roll 37 Photo 5 facing S at ground showing IES inserting gasket in between saddle and yard piping at SVE-74.

1515 IES finishing up work for the day. Left site for day

2/27/03

(5)

3/4/03

0730 Arrive on site, ~20°F, cloudy SE wind, snow forecasted in afternoon.

Personnel onsite

Lee Orosz	MWH
Lance DeBartolo	IES
Mike Petrich	IES
Tim Kirkland	Austgen
Terrance Jones	IES
Leigh Peters	BVSPC

Activities Planned today

① IES continue to connect ONCA ISVE piping

② Austgen install utility poles.

0735 Went to ONCA Observed Austgen installing utility pole.

0737 Roll 37 Photo 6 facing E of Austgen drilling for utility pole.

MWH monitoring with PID poles installed to depth of 5 feet, 5 poles total being installed - 3 within ONCA SBRA yesterday. L. Orosz reported that its PID was not working well yesterday because of the cold but MWH stayed upwind. L. Orosz reported that the 2nd pole location west of the blower shed was observed to be the "hottest" but personnel remained upwind.

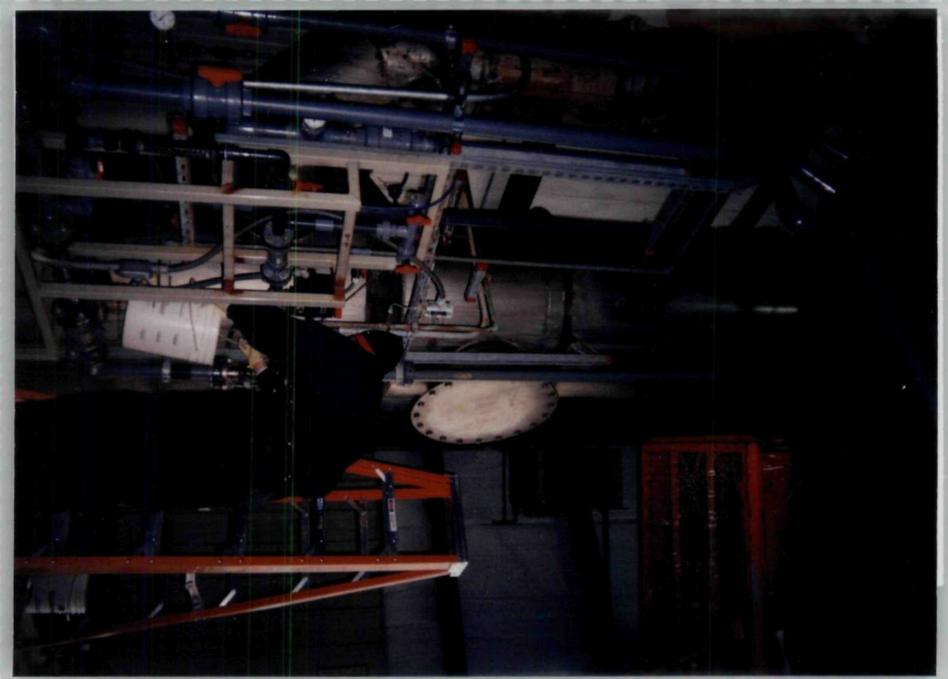
Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #1
Date: 02-05-03 Time: 08:15
Photographer: Leigh Peters
Description: Photo facing south showing IES installing the bulkhead fitting for the air supply line at ONCA SBPA ISVE system DPE well SVE-46.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #2
Date: 02-05-03 Time: 08:40
Photographer: Leigh Peters
Description: Photo facing west showing IES placing pump into ONCA SBPA ISVE system DPE well SVE-50.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #3
Date: 02-05-03 Time: 08:45
Photographer: Leigh Peters
Description: Photo facing west showing IES installing the bulkhead fitting at ONCA SBPA ISVE system DPE well SVE-58. Pitless adaptor connected to pump in foreground.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #4
Date: 02-05-03 Time: 09:05
Photographer: Leigh Peters
Description: Photo facing west showing IES placing the pump in ONCA SBPA ISVE system well SVE-80.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #6
Date: 02-05-03 Time: 10:50
Photographer: Leigh Peters
Description: Photo facing west of Ryan Construction removing the ductwork between the ONCA ISVE system thermal oxidizer and scrubber units.



Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #5
Date: 02-05-03 Time: 09:40
Photographer: Leigh Peters
Description: Photo facing west showing Ryan Construction disassembling the OFCA ISVE system scrubber.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #7
Date: 02-05-03 Time: 10:56
Photographer: Leigh Peters
Description: Photo facing north at the ground showing the corroded primary quench nozzle removed from the OFCA ISVE system scrubber unit.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #8
Date: 02-05-03 Time: 13:30
Photographer: Leigh Peters
Description: Photo facing southeast showing IES installing the air line connection to the HDPE yard piping at ONCA SBPA ISVE system DPE well SVE-50.

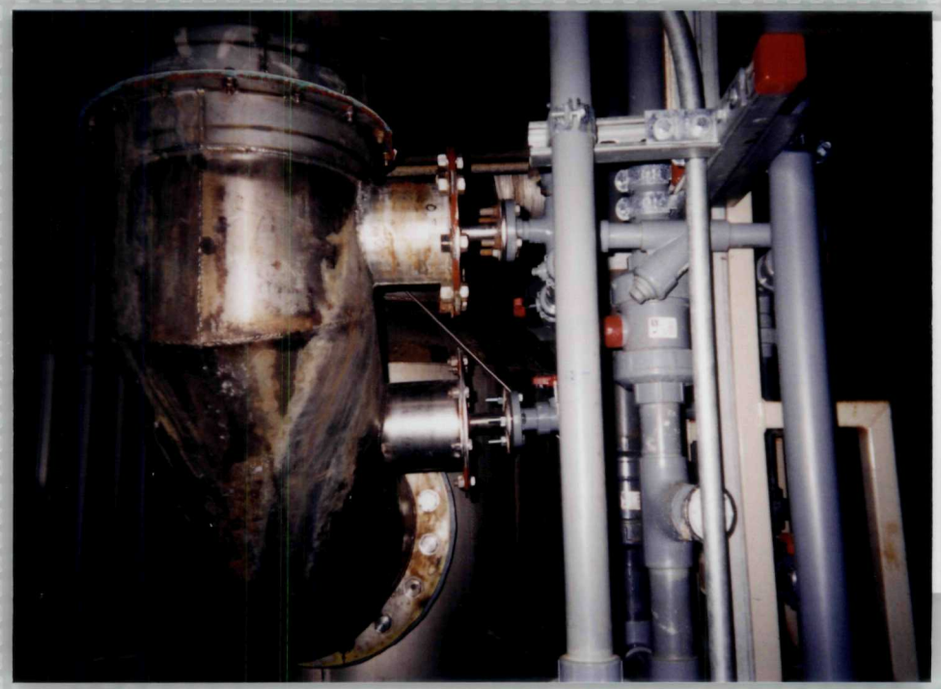
Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #9
Date: 02-05-03 Time: 14:05
Photographer: Leigh Peters
Description: Photo facing southwest showing IES welding the air line tee to ONCA SBPA ISVE system DPE well SVE-43.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #10
Date: 02-06-03 Time: 08:05
Photographer: Leigh Peters
Description: Photo facing west showing the staining where the greatest heat and failing welds inside the OFCA ISVE scrubber unit were located.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #11
Date: 02-06-03 Time: 09:35
Photographer: Leigh Peters
Description: Photo facing south at the ground of material removed from the OFCA ISVE system scrubber sump, ducting, and solids in sump (from left to right).

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #12
Date: 02-13-03 Time: 08:52
Photographer: Leigh Peters
Description: Photo facing west at the ground showing the ONCA SBPA ISVE system yard piping connection to air sparge point AS-3.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #13
Date: 02-13-03 Time: 08:55
Photographer: Leigh Peters
Description: Photo facing west showing the temporary air supply to the ONCA SBPA ISVE system DPE well pump air lines from the groundwater treatment plant.



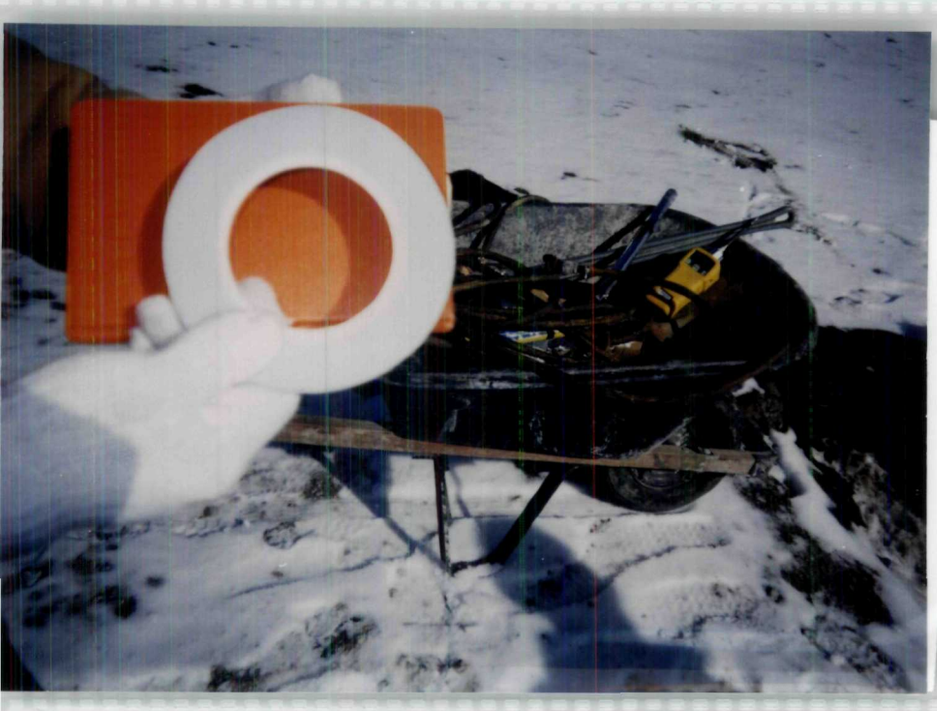
Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #14
Date: 02-13-03 Time: 09:18
Photographer: Leigh Peters
Description: Photo facing west showing the locations of the two quench bars installed in the ducting between the OFCA ISVE system thermal oxidizer and scrubber units.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #15
Date: 02-19-03 Time: 07:50
Photographer: Leigh Peters
Description: Photo facing south showing IES removing the frozen ground surrounding ONCA SBPA ISVE well SVE-80 with a jackhammer in order to install yard piping.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #16
Date: 02-19-03 Time: 14:10
Photographer: Leigh Peters
Description: Photo facing southwest showing IES connecting the yard piping to ONCA SBPA ISVE system well SVE-80.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #17
Date: 02-19-03 Time: 09:30
Photographer: Leigh Peters
Description: Photo facing northeast at ground of the sample collected at SDPT-01 from the interval of 20-24 feet bgs (20 feet depth sample in the foreground).

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #18
Date: 02-19-03 Time: 10:45
Photographer: Leigh Peters
Description: Photo facing east showing MWH collecting a soil sample using the Encore sampler for volatile organic compound analysis from the interval of 26-27 feet bgs at SDPT-01.



Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #19
Date: 02-19-03 Time: 11:20
Photographer: Leigh Peters
Description: Photo facing north showing the teflon gasket that IES is installing between the HDPE yard piping flange and the saddle located at the ONCA SBPA ISVE wells.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #20
Date: 02-19-03 Time: 12:50
Photographer: Leigh Peters
Description: Photo facing southeast showing MWH collecting a sample for total petroleum hydrocarbons at SDPT-02.

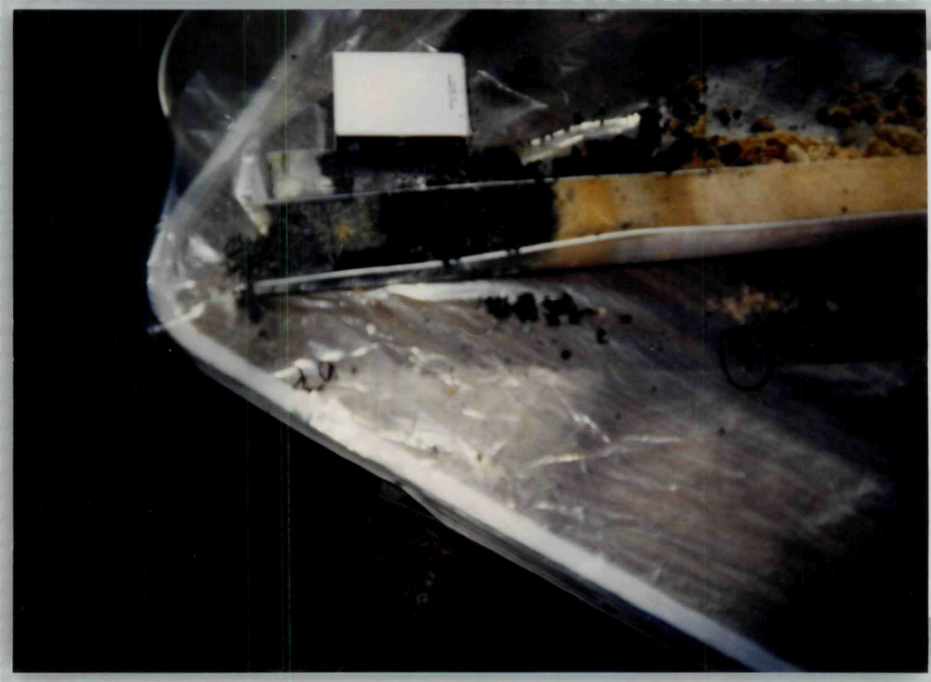
Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #21
Date: 02-19-03 Time: 13:50
Photographer: Leigh Peters
Description: Photo facing southeast showing the sample from 20(L) to 24(R) feet bgs at SDPT-03. MWH reported black staining observed at 22 feet bgs and PID=485 ppm.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #22
Date: 02-19-03 Time: 13:55
Photographer: Leigh Peters
Description: Photo facing northeast showing the sample from 22 feet bgs at location SDPT-03.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #23
Date: 02-19-03 Time: 15:10
Photographer: Leigh Peters
Description: Photo facing northwest showing MWH sampling at SDPT-04 for volatile organic compound analysis and Mid-America Drilling installing geoprobes.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 36 Photo #24
Date: 02-20-03 Time: 09:15
Photographer: Leigh Peters
Description: Photo facing north showing MWH collecting sample using an Encore sampler from 23.5 feet bgs at SDPT-07 for volatile organic compound analysis.

Site: American Chemical Services, Inc.
Proj. # 46526
Roll: 36 Photo #25
Date: 02-20-03 Time: 09:35
Photographer: Leigh Peters
Description: Photo facing north showing MWH measuring the differential pressure at the OFCA ISVE system well SVE-13. Note brown product in piping for several wells.



Site: American Chemical Services, Inc.
Proj. # 46526
Roll: 36 Photo #26
Date: 02-20-03 Time: 12:20
Photographer: Leigh Peters
Description: Photo facing south at the ground showing the black stained soil at SDPT-09 located from 19.5-20 feet bgs. MWH reported PID measured 7 ppm for this interval.

Site: American Chemical Services, Inc.
Proj. # 46526
Roll: 36 Photo #27
Date: 02-20-03 Time: 13:10
Photographer: Leigh Peters
Description: Photo facing south southeast showing Mid-America Drilling geoprobing at SDPT-06. Note orange cones and high visibility vest.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 37 Photo #1
Date: 02-20-03 Time: 14:35
Photographer: Leigh Peters
Description: Photo facing southeast showing IES rewelding the HDPE yard piping to better fit to the saddle at ONCA SBPA ISVE system well SVE-78.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 37 Photo #2
Date: 02-27-03 Time: 08:20
Photographer: Leigh Peters
Description: Photo facing southwest showing IES tapping into ONCA SBPA ISVE system vapor phase well SVE-59.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 37 Photo #3
Date: 02-27-03 Time: 09:00
Photographer: Leigh Peters
Description: Photo facing northwest showing IES removing the gravel from underneath the yard piping to ONCA SBPA ISVE system well SVE-59.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 37 Photo #4
Date: 02-27-03 Time: 11:20
Photographer: Leigh Peters
Description: Photo facing southwest showing IES installing the saddle at ONCA SBPA ISVE system well SVE-71 after tapping the well.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 37 Photo #5
Date: 02-27-03 Time: 15:10
Photographer: Leigh Peters
Description: Photo facing south at the ground showing IES inserting the teflon gasket in between the saddle and the yard piping at SVE-74.